Energy Issues in San Diego and the California-Baja California Binational Region

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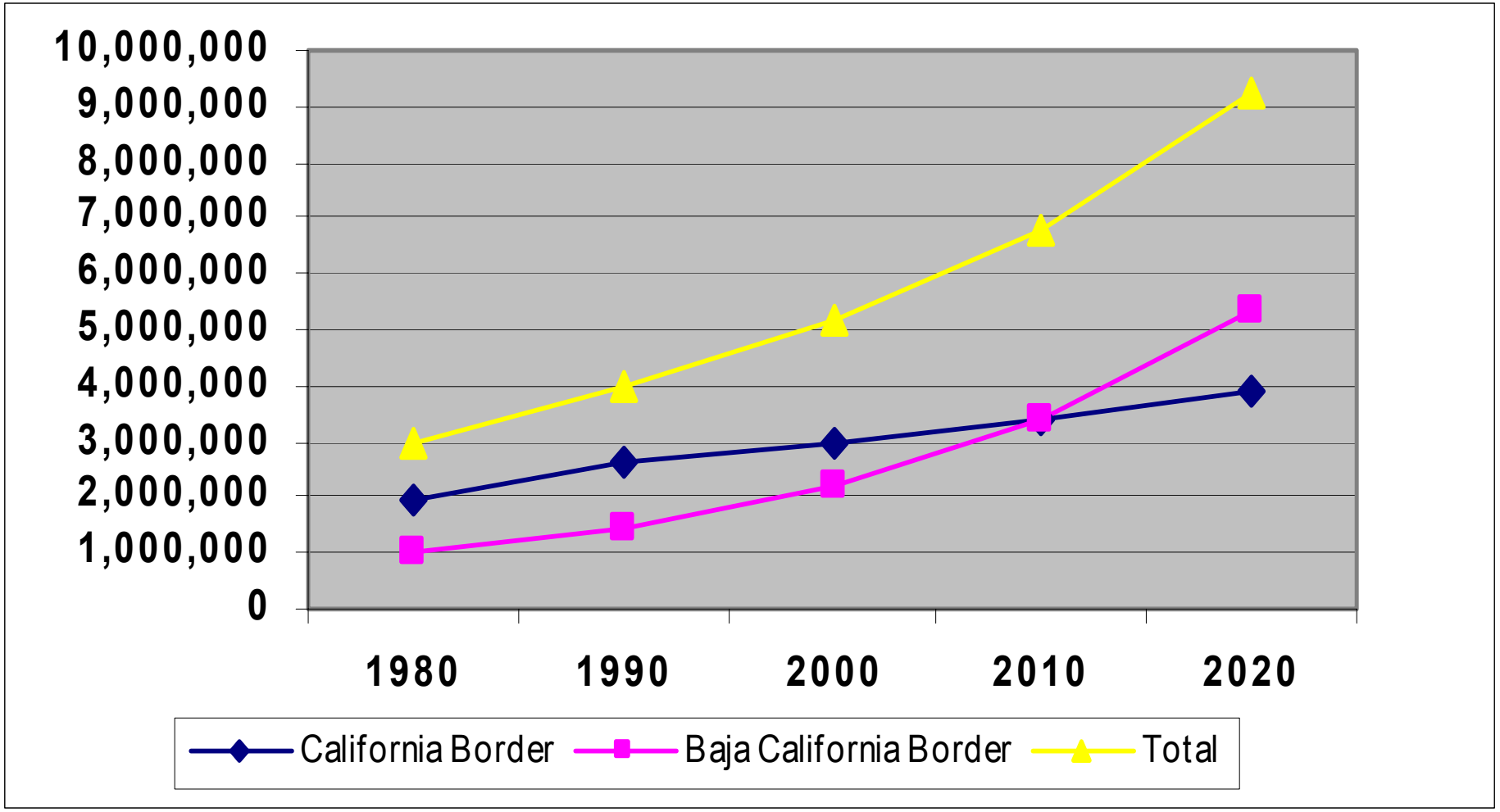
California Energy Commission Workshop

September 30 2004

- Energy Planning in the California-Baja California Binational Region
- Energy Portfolios and Related Air Emissions
- Renewable Energy Working Group

Energy Planning in the California-Baja California Binational Region

California-Baja California Border Population, 1980–2020



Source: *The U.S.-Mexican Border Environment: A Road Map to a Sustainable 2020*. San Diego State University Press. Paul Ganster, editor, 2000

Main Issues

- San Diego and Baja California are almost *totally dependent* on energy resources from outside the region.
- Current population is about 6 million. By 2020, population projected to be 9 million.
- Demand for power in Baja California is expected to grow by 6-7 % per year and in San Diego by 1.5% per year, at least for next 5-7 years.
- Demand for natural gas in Baja California is expected to increase 7% annually for the next ten years. In San Diego, much less, only 1.6%.
- Currently, main energy resources are oil, natural gas, geothermal and uranium. Very small amounts of solar and wind.

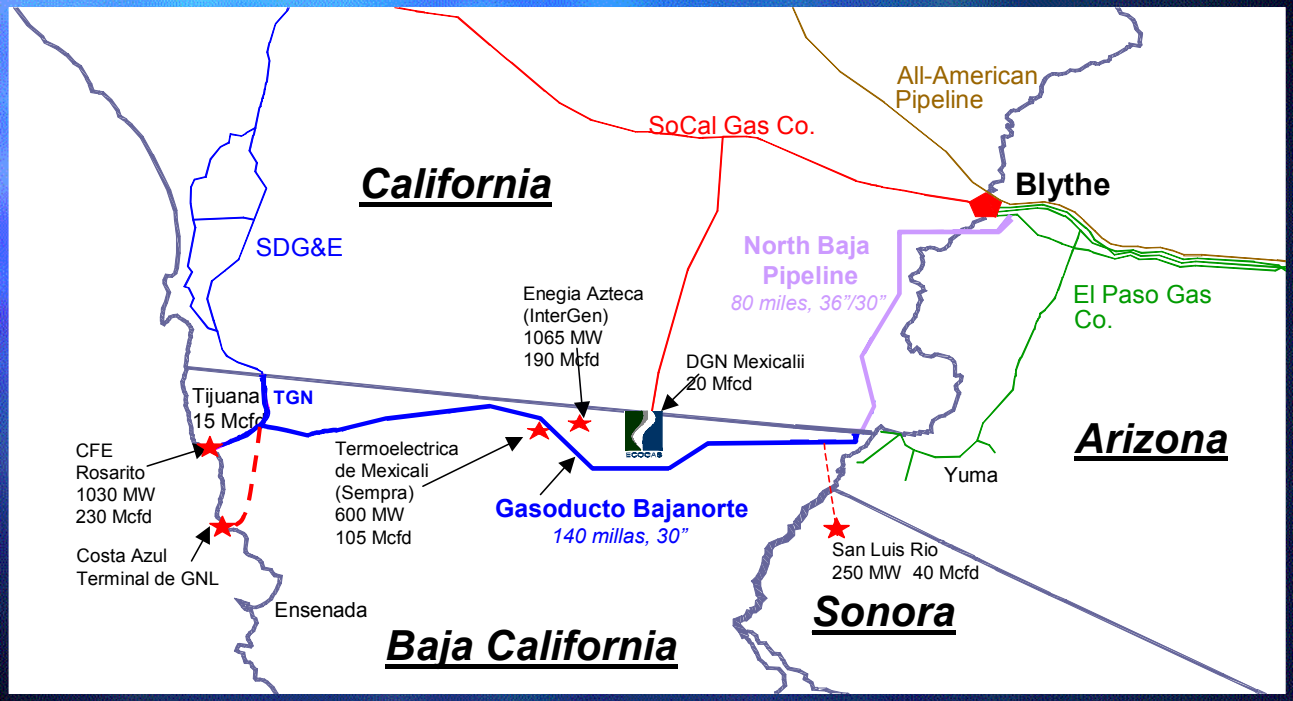
Average Annual Growth Rates for Baja California

Load Forecast 2002-2007

Areas	Load Growth 1997-2002	Peak Load MW		Expected Load Growth 2002-2007
		2002	2007	
Tijuana	8.52%	530	793	8.3%
Ensenada	5.71%	141	189	6.11%
Mexicali	6.77%	843	1,190	7.14%
San Luis R.C.	4.10%	155	211	6.36%
Tecate	6.68%	30	43	7.38%
Total	**6.94%**	**1,699**	**2,426**	**7.38%**

San Diego Growth: 1.5%: 2004 - 2009

Energy Infrastructure in Baja California



How to Meet Expected Demand for Energy Services?

- **Increase supply of conventional fuels (oil, natural gas, coal, uranium).**
- **Increase supply of renewable energy resources (solar, wind, biomass, geothermal).**
- **Reduce demand (demand side management, increase energy efficiency, time of day pricing, better housing stock, increased prices, etc.).**
- ***Most likely, a combination of all of the above.***

Energy Planning in the Region

- San Diego
  - Regional Energy Policy Advisory Council (SDREO, stakeholders)
  - Regional Energy Strategy (SANDAG)
  - SANDAG's Energy Working Group
  - SDGE LTRP
- Binational Planning
  - Border Energy Issues Group (SANDAG-Consul General of Mexico)
  - Tijuana Trabaja (citizens group)
  - Border Powers Working Group (NGO)
  - Border 2012 Air Working Group (EPA-SEMARNAT)
  - Southwest Consortium for Env. Res. and Policy (SCERP)
  - Western Governors Energy Working Group (WGA)

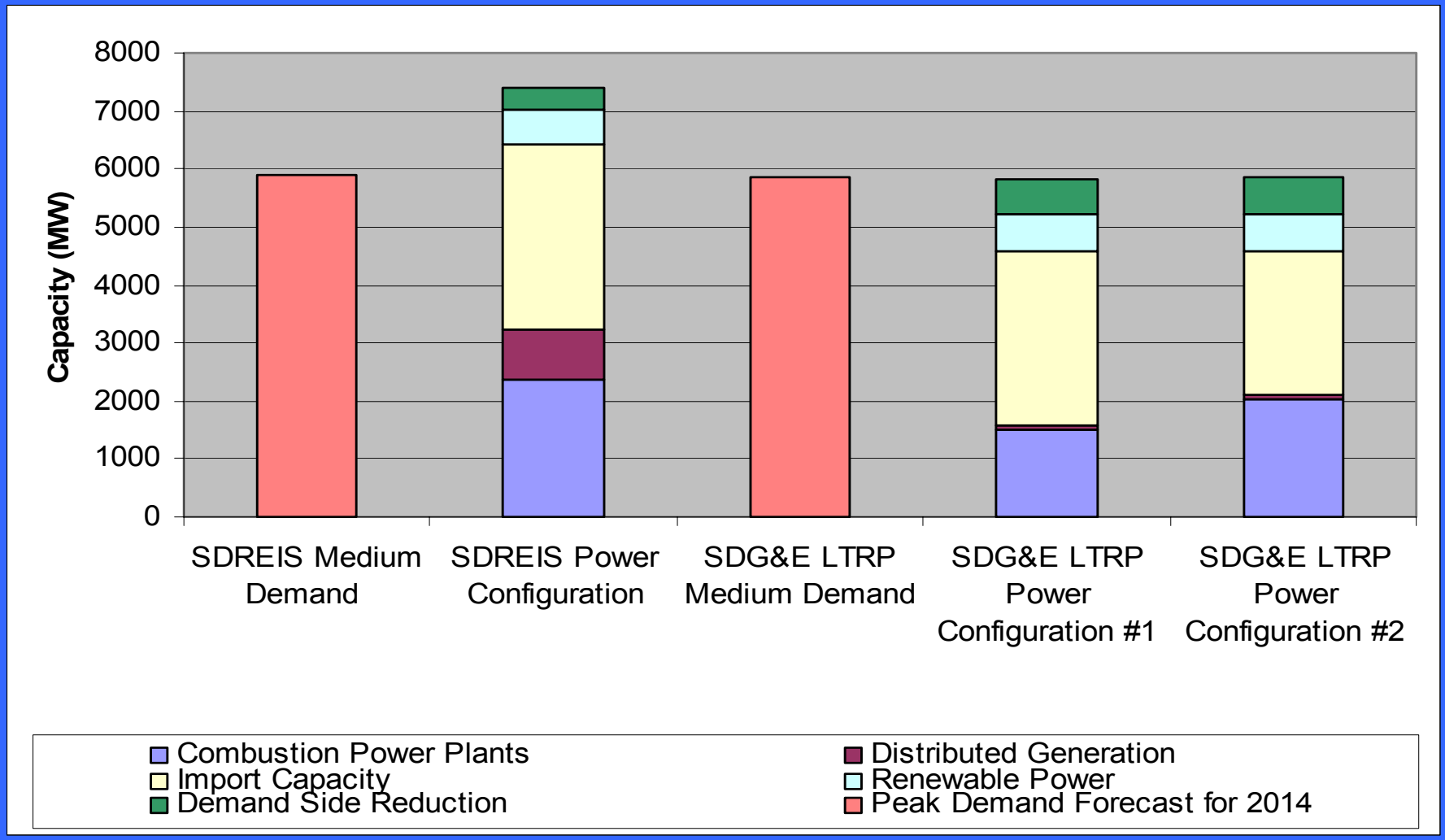
- ***RES*: broad-based stakeholder process over two year period. Adopted by SANDAG in 2003 as region's official energy plan.**

- ***SDGE LTRP*: presented to CPUC July 2004.**

- ***Energy Working Group*: Established by SANDAG January 2004. Main purpose is to facilitate implementation of RES and develop regional consensus on energy issues, including close cooperation with utility.**

- ***Border Energy Issues Group:* Binational committee to discuss energy issues in CA-BC region. SANDAG-Consul General. Possibly develop agreed upon "rules of the road" for energy projects in border region.**

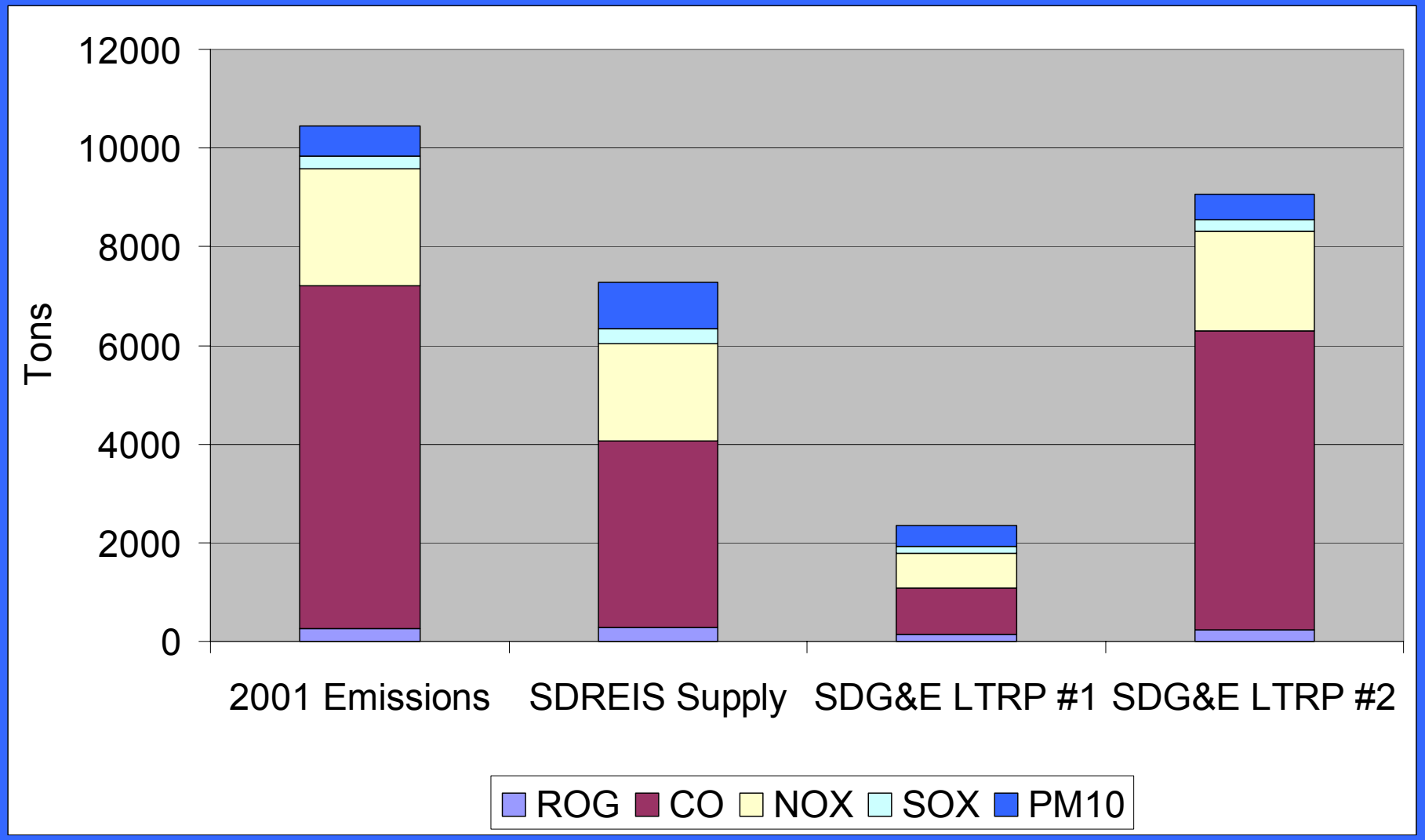
San Diego Peak Demand and Supply Forecasts 2014



#1: Current main power plants retired.
#2: Current main power plants still operating.

SDSU Center for Energy Studies

Comparison of 2001 San Diego Power Production Air Emissions with Potential Air Emissions in 2014



Renewable Energy Study Group for the Greater San Diego Region

- **Purpose of study is to determine the potential for renewable energy that could be developed in the region.**
  - **Focuses on technical and economic aspects of renewable energy development. *NOT on policy issues.***

- **Ad-hoc group of energy specialists from:**
  - **San Diego State University**
  - **SDG&E**
  - **Qualcomm**
  - **SDREO**
  - **SOCAL Gas**
  - **Universidad Autónoma de Baja California, Mexicali**
  - **NREL**
  - **Southwest Consortium for Environmental Research and Policy (SCERP)**

- Renewable resources under study:
  - wind, solar (PV and thermal), biomass, geothermal.

- Region under study:
  - San Diego and Imperial Counties
  - Baja California *municipios* of Tijuana, Rosarito, Tecate and Mexicali.

- Transmission as it relates to accessing renewable resources.

- Cross-border issues:
  - Transmission
  - Access to resources
  - Security
  - Regulatory questions
  - Environmental standards

Status:

- Wind analysis complete by November
- PV analysis complete by January
- Geothermal analysis complete by February
- Biomass by March
- Full report by end of March, 2005.